

INS
BI

1 A dispenser for dispensing a length of web material to form a cutting edge and reinforcing a substrate comprising:

a feed roll for advancing said web material along a predetermined path;

5 a vacuum roll for picking up the web material from said feed roll, means for rotating said vacuum roll, said vacuum roll having an outer foraminous cylindrical peripheral surface and means for applying subatmospheric pressure at said surface throughout a portion of said surface during each rotation thereof;

hub and shaft means for supporting said vacuum roll for rotation about an axis perpendicular to said path of said web material;

10 a rotary knife positioned near said vacuum roll for rotation of said rotary knife to engage said web material on said vacuum roll upon each rotation of said vacuum roll, to cut the web material at some location; and

an applicator for receiving said cut length of web material from said vacuum roll and advancing said cut length to said substrate.

15 2. A dispenser according to claim 1 wherein said applicator comprises a vacuum wheel applicator which picks up a said length of web material and retains the same on a foraminous surface to carry said length of web material about an arcuate path to a substrate.

20 3. A dispenser according to claim 2 wherein an adhesion preparation means is placed about a portion of said arcuate path for activating said web material as it is advanced past said adhesion preparation means.

25 4. A dispenser according to claim 2 wherein said adhesion preparation means is a heater means.

5. A dispenser according to claim 4 wherein an insulator positioned between said heater and said vacuum roll restricts said vacuum roll from being heated by said heater.

30 6. A dispenser according to claim 1 wherein said feed roll and said vacuum roll have separate drive means for affording rotation of said feed roll such that its peripheral speed is equal to or less than the speed of the surface of said vacuum roll.

7. A dispenser according to claim 1 wherein said vacuum roll and said rotary knife are driven by common drive means, and wherein the web material contacts between 90 and 200 degrees of the periphery of the vacuum roll.

8. A dispenser according to claim 2, wherein said vacuum wheel applicator has drive means affording rotation thereof at a speed such that the surface speed of said foraminous surface thereof is independent of said feed roll and said vacuum roll, and that said vacuum wheel applicator has means for providing reduced atmospheric pressure on one side of a said web material to hold the same on said vacuum wheel applicator to advance the web material from a position adjacent said vacuum roll to a position opposed to said substrate.

9. A dispenser according to claim 1, wherein said rotary knife has a knife member extending from the peripheral surface to make interference contact with the surface of said vacuum roll at a position on the vacuum roll corresponding with the location of an insert on the vacuum roll for cutting the web material on the vacuum roll.

10. A dispenser according to claim 2, wherein a motor controller controls the speed of the feed roll, vacuum roll and vacuum wheel applicator to vary the length of web material cut and placed on said vacuum wheel applicator for application to a said substrate.

11. A dispenser according to claim 10, wherein said motor controller can set the speed of the vacuum roll to be equal to or greater than the speed of said feed roll whereby the length of the web material being dispensed can be readily changed.

12. A dispenser according to claim 11, wherein a sensor and a programmable logic controller can change the relationship of the speeds of said vacuum roll and feed roll and change the position of the web material on the substrate.

13. A tape feed assembly for feeding a predetermined length of tape to a substrate for depositing said length of tape to a carton blank in predetermined registry therewith, said feed assembly comprising:

a feed roll for advancing tape from a supply thereof along a predetermined path at a first speed;

a pressure roller for holding the tape in engagement with said feed roll;

a vacuum roll with an anvil insert for accepting a said tape from said feed roll;

a drive for said vacuum roll to provide a predetermined peripheral speed thereof different than said first speed for advancing said tape toward a said applicator in predetermined lengths;

a rotary knife having blade means engageable with said vacuum roll for cutting said tape against said vacuum roll; and

a motor controller means for changing said first speed and said predetermined speed to adjust the length of tape passing said vacuum roll before being cut by said rotary knife driven at said predetermined speed.

14. A tape feed assembly according to claim 13, wherein said applicator comprises a vacuum wheel applicator for receiving said cut length of tape and placing the same on a substrate, drive means for said vacuum wheel applicator to move a said cut tape from said vacuum roll to said substrate, drive means for rotating said vacuum wheel applicator, said vacuum roll drive means and said drive means for said vacuum wheel applicator affording peripheral speeds different than that of said feed roll and an adjustable control for affording the desired length of tape to be dispensed and variations in the registration of said tape on a substrate.

15. A tape feed assembly according to claim 13 comprising a signal generator for detecting the movement of a said substrate and for controlling said adjustable control and motor control for operating said vacuum roll and said rotary knife to place the predetermined length of tape in the desired position on the substrate.

16. A tape feed assembly according to claim 15 wherein said vacuum wheel applicator has an adhesion preparation means for preparing the length of tape as it is passed between said vacuum roll and the substrate.

17. A tape feed assembly according to claim 16 wherein said adhesion preparation means is a heater means.

18. A tape feed assembly according to claim 13, wherein said drive for said vacuum roll includes a line speed encoder, a programmable logic controller and motor controllers for the feed roll drive and for the vacuum roll drive to provide a tape drive speed what will meet the production run requirements.

19. A vacuum wheel having an outer foraminous cylindrical peripheral surface, a plurality of axially extending holes extending from a first axial surface of the wheel toward the other axial surface and communicating with selected rows of radially extending and peripherally spaced holes forming said foraminous surface, a manifold positioned against said first axial surface for exhausting air from said holes to apply subatmospheric pressure at said foraminous surface.

20. A vacuum wheel according to claim 19, wherein the manifold also includes an opening spaced to align with the axially extending holes to apply air pressure to said holes forming the foraminous surface.

21. A dispenser for a length of tape to form a cutting edge on a substrate comprising: a feed roll for advancing a said tape along a predetermined path;

vacuum roll means for picking up the tape from said feed roll, means for rotating said vacuum roll means, said vacuum roll means having an outer foraminous cylindrical peripheral surface and means for applying atmospheric pressure at said surface throughout a portion of said surface during each rotation thereof;

hub and shaft means for supporting said vacuum roll means for rotation about an axis perpendicular to said path of said tape;

rotary knife means positioned near said vacuum roll means for rotation of said rotary knife means to engage said tape on said vacuum roll means upon each rotation of said vacuum roll means, to cut the tape at some location; and

applicator means for receiving said cut length of tape from said vacuum roll means and advancing said cut length of tape for transfer to a substrate.

22. A dispenser according to claim 21 wherein said applicator means comprises a vacuum wheel applicator which picks up a said length of tape and retains the same on a foraminous surface to carry said length of tape about an arcuate path onto a substrate where it is cut to form a cutting edge on the substrate.

23. A dispenser according to claim 22 wherein the substrate is a carton blank and said tape forms a cutting edge on the formed carton.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

